

WHAT IS CLAIMED IS:

- 1 1. A method of managing dialogue in an interactive voice response
2 system (IVR) comprising the steps of:
3 receiving a voice signal from a caller to the IVR;
4 converting the voice signal to text;
5 estimating a caller type based on the number of words of a particular
6 type within the text; and
7 using the caller type to make a dialogue decision.
- 1 2. The method as in claim 1, wherein the caller type is an indication of
2 the competence level of the caller.
- 1 3. The method as in claim 1, wherein the caller type is based on a word
2 ratio.
- 1 4. The method as in claim 1, further comprising the steps of:
2 locating a word type flag in a dictionary for each word in the text;
3 incrementing a word type counter depending on the flag; and
4 estimating the caller type using the word type counter.

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- 1 5. The method as in claim 4, further comprising the steps of:
2 identifying more than one word type from the word type flag; and
3 incrementing more than one word type counter.
- 1 6. The method as in claim 5, further comprising the step of identifying from each
2 bit of the word type flag whether a word is a certain type, each bit of the word type
3 flag being associated with one word type.
- 1 7. The method as in claim 1, wherein the using step further comprises the step of
2 making the dialogue decision on which prompt to present next to the caller as a
3 function of the estimated caller type.
- 1 8. The method as in claim 7, wherein the dialogue decision whether to use expert
2 or novice prompts is made depending on whether the caller type is above or below a
3 threshold value.
- 1 9. The method as in claim 7, wherein a decision whether to use expert,
2 intermediate, or novice prompts is made depending on whether the caller type falls
3 below, inside or above a threshold range.
- 1 10. The method as in claim 1, wherein one word type is made up of words
2 relevant to the context of the dialogue.
- 3 11. The method as in claim 10, wherein another word type is made up of words
4 relevant to the context of a task specific part of the dialogue.

1 12. The method as in claim 10, wherein a number of words per second spoken by
2 the caller is used together with the context type to give a further approximation as to a
3 competence of the caller.

1 13. The method as in claim 12, wherein the context ratio and the number of words
2 per second are weighted and combined to give an overall factor having a threshold
3 value or range to decide the competence of the caller.

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1 ~~14~~ A system for managing dialogue in an interactive voice response system (IVR)
2 comprising:

3 the IVR receiving a voice signal from a caller;
4 an automatic speech recognition system (ASR) converting the voice signal to
5 text;
6 a lexical analyzer estimating a caller type based on the number of words of a
7 particular type within the text; and
8 a prompt generator using the caller type to make a dialogue decision.

1 15. The system as in claim 14, wherein the caller type is an indication of the
2 competence level of the caller.

1 16. The system as in claim 14, wherein the caller type is based on a word ratio.

1 17. The system as in claim 14, further comprising:
2 a search engine locating a word type flag in a dictionary for each word in the
3 text;
4 account engine incrementing a word type counter depending on the flag; and
5 the lexical analyzer estimating the caller type using the word type counter.

1 18. The system as in claim 17, further comprising:
2 the search engine identifying more than one word type from the word type
3 flag; and
4 the count engine incrementing more than one word type counter.

1 19. The system as in claim 18, further comprising the search engine identifying
2 from each bit of the word type flag whether a word is a certain type, each bit of the
3 word type flag being associated with one word type.

1 20. The system as in claim 14, wherein the prompt generator makes the dialogue
2 decision on which prompt to present next to the caller as a function of the estimated
3 caller type.

1 21. The system as in claim 20, wherein the dialogue decision whether to use
2 expert or novice prompts is made depending on whether the caller type is above or
3 below a threshold value.

1 22. The system as in claim 20, wherein a decision whether to use expert,
2 intermediate, or novice prompts is made depending on whether the caller type falls
3 below, inside or above a threshold range.

1 23. The system as in claim 14, wherein one word type is made up of words
2 relevant to the context of the dialogue.

1 24. The system as in claim 23, wherein another word type is made up of words
2 relevant to the context of a task specific part of the dialogue.

1 25. The system as in claim 23, wherein a number of words per second spoken by
2 the caller is used together with the context type to give a further approximation as to a
3 competence of the caller.

1 26. The system as in claim 25, wherein the context ratio and the number of words
2 per second are weighted and combined to give an overall factor having a threshold
3 value or range to decide the competence of the caller.

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1 ~~27~~ A computer program product, stored on a computer-readable storage medium,
2 for executing computer program instructions to carry out the steps of a method
3 of managing dialogue in an interactive voice response system (IVR)
4 comprising the program steps of:
5 in response to receipt of a voice signal from a caller to the IVR, converting the
6 voice signal to text;
7 estimating a caller type based on the number of words of a particular type
8 within the text; and
9 using the caller type to make a dialogue decision.

1 28. The computer program product as in claim 27, wherein the caller type is an
2 indication of the competence level of the caller.

1 29. The computer program product as in claim 27, wherein the caller type is based
2 on a word ratio.

1 30. The computer program product as in claim 27, further comprising the program
2 steps of:
3 locating a word type flag in a dictionary for each word in the text;
4 incrementing a word type counter depending on the flag; and
5 estimating the caller type using the word type counter.

1 31. The computer program product as in claim 30, further comprising the program
2 steps of:

3 identifying more than one word type from the word type flag; and
4 incrementing more than one word type counter.

1 32. The computer program product as in claim 31, further comprising the program
2 step of identifying from each bit of the word type flag whether a word is a certain
3 type, each bit of the word type flag being associated with one word type.

1 33. The computer program product as in claim 27, wherein the using program step
2 further comprises the program step of making the dialogue decision on which prompt
3 to present next to the caller as a function of the estimated caller type.

1 34. The computer program product as in claim 33, wherein the dialogue decision
2 whether to use expert or novice prompts is made depending on whether the caller type
3 is above or below a threshold value.

1 35. The computer program product as in claim 33, wherein a decision whether to
2 use expert, intermediate, or novice prompts is made depending on whether the caller
3 type falls below, inside or above a threshold range.

1 36. The computer program product as in claim 27, wherein one word type is made
2 up of words relevant to the context of the dialogue.

1 37. The computer program product as in claim 36, wherein another word type is
2 made up of words relevant to the context of a task specific part of the dialogue.

1 38. The computer program product as in claim 36, wherein a number of words per
2 second spoken by the caller is used together with the context type to give a further
3 approximation as to a competence of the caller.

1 39. The computer program product as in claim 38, wherein the context ratio and
2 the number of words per second are weighted and combined to give an overall factor
3 having a threshold value or range to decide the competence of the caller.